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THIS IS UNEVALUATED INFORMATION

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Survey of Plans for Telecommunications in Polish Electric Power System
by Soviet Experts

1. The Ministry of Power completed, in August 1952, a project and design for providing modern telecommunications equipment for use in the electric power system, especially for the Central Dispatching Office and for its subordinate district dispatching offices. The Technical Documentation Bureau of the State Commission for Economic Planning then sent the project to Moscow for appraisal.
2. In March 1953 two Soviet experts, Boris FIODOROW and Konstantin MICHAJLOW /Annex A/ arrived in Poland to discuss and revise the project on the basis of a general plan brought with them from Moscow.
3. The Soviet experts were assisted in their work by a special planning group of five Polish engineers assigned for this special work. All basic technical data regarding the actual condition of the Polish electric power system, plans for 1953-1955, and the outlines of planned developments up to 1960 were prepared by this group and translated into the Russian language. At the request of the Soviet specialists, various articles from Polish technical literature were also translated including such articles as, "The Guiding Principles in the Preliminary Planning of the Carrier Frequencies on the Electric Power Lines".
4. The Soviet experts completed their work at the beginning of June 1953. During the first month they went by car to all important power plants and substations. They conducted many conferences with the directors and personnel of the district power administration,

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and the larger plants and substations. The dispatching personnel took part in all of those conferences. Throughout the following two months, the Soviet specialists worked out their own design which differed from the Polish one and was substantially based on the single-band carrier equipment already in use in Poland.

5. The design called for the solution of Polish telecommunications problems by the use of special equipment for single-band carrier telephony of the ZCK-300 type which was already on order from L.M. Ericsson Company in Sweden. Because the appropriated telemetering equipment to be used on carrier frequency channels had not been ordered, the Soviet specialists gave no specific suggestions regarding its selection. For this reason the Ministry of Power was forced to make the decision.
6. With respect to the remote control system the Soviet experts spoke only generally and pointed out, that they could have expressed an opinion on the technical qualifications of selected equipment only. They also gave no opinion on the choice of the selective protection of the carrier frequency system. They limited themselves to recommending its application on 110 and 220 KV transmission lines, but gave no definite specifications in this matter.
7. With regard to radio-links, the Soviet experts expressed a negative opinion and stated that this problem had not as yet been solved in Russia. The radio-links which had been constructed in the USSR from German and US equipment had been withdrawn from use because of a shortage of spare parts, especially electronic tubes which were unobtainable. The Soviet experts pointed out further that the exploitation of these radio-links was not economical, considering the very short life of tubes, which was about 400 hours. [redacted] not [redacted] convincing but [redacted] evidence of the critically low level of production of tubes in the USSR. Despite the opinion of the Soviet experts, the Polish experts thought that radio-links would be cheaper.
8. The Soviet experts emphasized their belief that the Polish preliminary plan of frequencies was good but used it only to a small degree in their own design. The telestrades (direct long-distance connections), for which a certain frequency group had been especially provided, found no application in the design. In the opinion of Polish experts this would result in creating a certain confusion in the frequency distribution plan and could cause interference in the carrier frequency connections. After the departure of the Soviet experts, it was decided that the frequency distribution should be changed in a way to guarantee easy future development and save the time which would otherwise be wasted on supplementing special selective separating filters necessary to avoid interference.
9. The Soviet specialists particularly stressed the necessity of constructing a remote control network on the carrier telephony system. They stated that telemetering would be only partially effectual without strongly developed remote control. The Soviet experts, contrary to the view of the Polish experts, gave a negative opinion concerning transmitting telemetering values of reactive power from power plants to all dispatching points. They said that on the basis of Soviet experience, the values of reactive power should be transmitted to the district dispatching offices only and even then only in special cases. The telemetering values of active power should be, in their opinion, transmitted to the Central Dispatching Office. The Soviet experts were of the opinion that the Central Dispatching Office should be provided with an indicator which would register the total sum of power of all important power plants in Poland and that an identical instrument should be installed in the office of the Minister of Power.

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10. The Soviet specialists recommended the automatization of hydroelectric power plants, even the largest ones, but offered no definite suggestions concerning this problem.
11. The Soviet specialists were not impressed by the quality of the telecommunications equipment produced in East Germany. The equipment produced in Sweden was recommended and they praised equipment of Swiss production (BBC, Landis-Gyr). In their conversations, they pointed out the high quality of US equipment, particularly that of the General Electric and Westinghouse companies.

Soviet Experts in Poland

12. [redacted]
 50X1 certain Soviet experts [redacted] came to Poland as consultants on different
 50X1 problems [redacted]
 50X1 [redacted] especially
 50X1 Konstantin MICHAJLOW and Boris FIODOROW, [redacted]
 50X1 [redacted]
 50X1 [redacted] following information regarding telecom-
 50X1 munications in various countries:

a. China

A Soviet survey of telecommunications was conducted in China and at the same time extensive technical discussions were carried out by the Soviet experts with the Chinese. The Chinese submitted a design which solved certain telecommunications problems. The design was based on a US design and on US equipment, part of which they possessed (carrier telephony, remote control). The Chinese frequently sought direct consultation with Moscow, even on small matters of designing such as the problem of laying cables.

b. Manchuria

There was a very primitive telecommunications network in Manchuria. An old type telephony system operating on lines suspended on high-tension towers was used.

c. Rumania

In 1952 the project of telecommunications for the electric power system in Rumania was completed with the assistance of Soviet specialists.

d. USSR

- (1) In 1953 the installation of a carrier telephony system along 220 KV transmission lines between Kujbyszew and Moscow was under construction (circa 1,000 km.).
- (2) Great difficulties were encountered in the production of highly sensitive precision instruments.
- (3) The educational research institutes underwent frequent reorganizations and a minimum of practical results was achieved by them.
- (4) Work conditions were generally bad; there was too much bureaucracy and too much overtime work in the designing offices. Though a considerable amount of work was accomplished, the results were small.
- (5) Materials delivered as reparations from East Germany were of low quality; the equipment was frequently faulty.

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